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034157, 975 11/23/93 O'SULLIVAN

EXAMINER

SAFOUREK, B

26M1/0103

ART UNIT

PAPER NUMBER

5

WILLIAMS, JEROMMER, has been assigned to the
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Patent and Trademark Office, Washington, D.C. 20231
DATE MAILED: 11/23/93

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

Applicant is required to respond to this communication within the period for response.

Correction in response to this communication is required. ☒ This application has been examined ☐ Responsive to communication filed on ☐ This action is made final.
Correction of the noted deficiencies is required. A shortened statutory period for response to this action is set to expire 3 month(s), 0 day(s) from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-21 are pending in the application.
Of the above, claims 1-21 are withdrawn from consideration.
2. ☐ Claims 1-21 have been cancelled.
3. ☐ Claims 1-21 are allowed.
4. ☒ Claims 1-21 are rejected.
5. ☐ Claims 1-21 are objected to.
6. ☐ Claims 1-21 are subject to restriction or election requirement.
7. ☒ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on 11/23/93. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on 11/23/93, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed 11/23/93, has been ☐ approved; ☐ disapproved (see explanation).
12. ☒ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☒ been received ☐ not been received ☐ been filed in parent application, serial no. 034157; filed on 11/23/93.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1835 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

Serial Number: 08/157,375

-2-

Art Unit: 2603

A. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119, which papers have been placed of record in the file.

B. The drawings are objected to because boxes 8 and 9 in Figures 4 and 5 need descriptive legends. Correction is required.

C. Applicant is required to submit a proposed drawing correction in response to this Office action. However, correction of the noted defect can be deferred until the application is allowed by the examiner.

D. The serial number missing from page 10, line 20 should be supplied.

E. Claims 1-21 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The way lines 10-13 of claim 1, lines 8-11 of claim 2 lines 7-10 of claim 8 and lines 3-6 of claim 14 are written, in the absence of any multipath, the transmission times would have to be infinitesimally short, i.e. zero. The last 5 lines of each of these claims is written like a method claim and do not restrict any specific element. Is the transceiver powered by the computational device or not? "Able to be" powered is indefinite. Does the computational device have any power? Claims 3-5 lack any means to perform the additional function or steps. There is no modulation in claims 5 or 1 for

Art Unit: 2603

the modulation of claim 6 to have antecedence. Claims 3, 7, 9, 13, 17 and 21 are improper markush groups. Claims 14-16 appears to be single element or single means claims. The claims recite the reciprocal of the bit rate being short relative to the time delay differences in the multipaths but this assumes bit rate is somehow equated to transmission time as on page 12 of the specification. The bit rate could be high or low and still not produce the required transmission period.

F. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

Art Unit: 2603

Claims 1-3, 5-9, 11-15, 17 and 19-21 are rejected under 35 U.S.C. § 103 as being unpatentable over Smith in view Schuchman et al. Schuchman et al discloses an anti multipath system which uses block coding and frequency hopping. The blocks of 1024 are sent in 2 milliseconds which gives about one microsecond for each symbol (col. 7). At the assumed 10μ second multipath delay difference (col. 6) this gives a reciprocal of the bit rate as claimed by applicants.

At the 60 megahertz bandwidth used a carrier frequency of at least 10 GHZ would need to be used. Schuchman is for digital audio but the type of information is unimportant once it is digitized. Smith has an antimultipath system with computers and transceivers powered by the computers. In view of the teachings by Schuchman in column one to overcome fading and multipath distortion it would have been obvious to one of ordinary skill in the art to use the modulation scheme of Schuchman in Smith. Smith has the sounding of claims 3, 9 and 17. Schuchman has an ensemble of carriers (33) as in claims 5, 11, 15 and 19; QPSK as in claims 6, 7, 12, 13, 20 and 21.

G. Claims 4, 10 and 18 are rejected under 35 U.S.C. § 103 as being unpatentable over Smith and Schuchman as applied to claims 1-3, 8, 9, 14 and 17 above, and further in view of Furuya et al. Furuya discloses sending information in packets. The blocks of Schuchman are probably packets anyway but Furuya teaches using

Serial Number: 08/157,375

-5-

Art Unit: 2603

packets as such so that definite blocks are available for error checking etc. In view of the error checking ability of Furuya it would have been obvious to send the data of Schuchman in packets.

H. Claim 16 is rejected under 35 U.S.C. § 103 as being unpatentable over Smith and Schuchman as applied to claim 15 above, and further in view of Cutter. Cutter has Fourier transformers and detransformers for a carrier ensemble (205-208) Cutter that his Fourier Transform method reduces errors, see abstract. If one of ordinary skill in the art needed further error reduction in Schuchman they would have found it obvious to use transform encoding as taught by Cutter.

I. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

J. Any inquiry concerning this communication or earlier communications from the examiner should be directed to B. V. Safourek whose telephone number is (703) 305-4364.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4750.

B. V. Safourek/skf
December 22, 1994

Benedict V. Safourek
BENEDICT V. SAFOUREK
PRIMARY EXAMINER
GROUP 263